staff. **Conclusions:** We safely cared for an extremely preterm infant with congenital measles. Laboratory testing suggested prolonged presence of measles virus, but it is unknown how long an infant in the NICU should remain on AII. The current Council of State and Territorial Epidemiologists case definition for measles requires the presence of rash. This case provides support to revise this case definition if laboratory findings are consistent with congenital measles.

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Poster Presentation

Influenza With an Infiltrate: Investigating the New Community-Acquired Pneumonia Guidelines

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Background: The Infectious Diseases Society of America released updated community-acquired pneumonia (CAP) guidelines in October 2019. One of the recommendations, with a low quality of supporting evidence, is the standard administration of antibiotics in adult patients with influenza and radiographic evidence of pneumonia. Procalcitonin (PCT) is not endorsed as a strategy to withhold antibiotic therapy, but it could be used to de-escalate appropriate patients after 48–72 hours. Radiographic findings are not indicative of the etiology of pneumonia. Prescribing antibiotics for all influenza-positive patients with an infiltrate has significant implications for stewardship. Therefore, we reviewed hospitalized, influenza-positive patients at our institution during the 2018–2019 season, and we sought to assess the impact of an abnormal chest x-ray (CXR) and PCT on antibiotic prescribing and outcomes. **Methods:** We conducted a retrospective chart review of all influenza-positive admissions at 2 urban, community-based, teaching hospitals. Demographic data, vaccination status, PCT levels, CXR findings, and treatment regimens were reviewed. The primary outcome was the difference in receipt of antibiotics between patients with a negative (<0.25 ng/mL) and positive PCT. Secondary outcomes included the impact of CXR result on antibiotic prescribing, duration, 30-day readmission, and 90-day mortality. **Results:** We reviewed the medical records of 117 patients; 43 (36.7%) received antibiotics. The vaccination rate was 36.7%. Also, 11% of patients required intensive care unit (ICU) admission and 84% received antibiotics. Moreover, 109 patients had a CXR: 61 (55.9%) were negative, 29 (26.6%) indeterminate, and 19 (17.4%) positive per radiologist interpretation. Patients with a positive PCT (OR, 12.7; 95% CI, 3.43–60.98; $P < .0007$) and an abnormal CXR (OR, 7.4; 95% CI, 2.9–20.1; $P = .000003$) were more likely to receive antibiotics. There was no significant difference in 30-day readmission (11.6% vs 13.5%; OR, 0.89; 95% CI, 0.21–3.08; $P = 1$) and 90-day mortality (11.6% vs 5.4%; OR, 2.37; 95% CI, 0.48–12.75; $P = .28$) between those that received antibiotics and those that did not, respectively. Furthermore, 30 patients (62.5%) with an abnormal CXR received antibiotics and 21 (43.7%) had negative PCT. There was no difference in 30-day readmission or 90-day mortality between those that did and did not receive antibiotics. **Conclusions:** Utilization of PCT allowed selective prescribing of antibiotics without impacting readmission or mortality. Antibiotics should be initiated for critically ill patients and based on clinical judgement, rather than for all influenza-positive patients with CXR abnormalities.

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Insertion Site Inflammation Is Associated with Central-Line–Associated Bloodstream Infection

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Background: Central lines (CL) are widely used in the inpatient setting and central-line–associated bloodstream infection (CLABSI) is a serious complication of CL use. Because CL insertion site inflammation (ISI) may precede the onset of CLABSI, we aimed to define ISI, to determine whether ISI was associated with CLABSI, and to develop an automated surveillance system for ISI. **Methods:** We extracted electronic medical records (EMRs) of adult patients hospitalized at the University of Iowa Hospitals & Clinics during January 2015–December 2018. Nurses routinely document

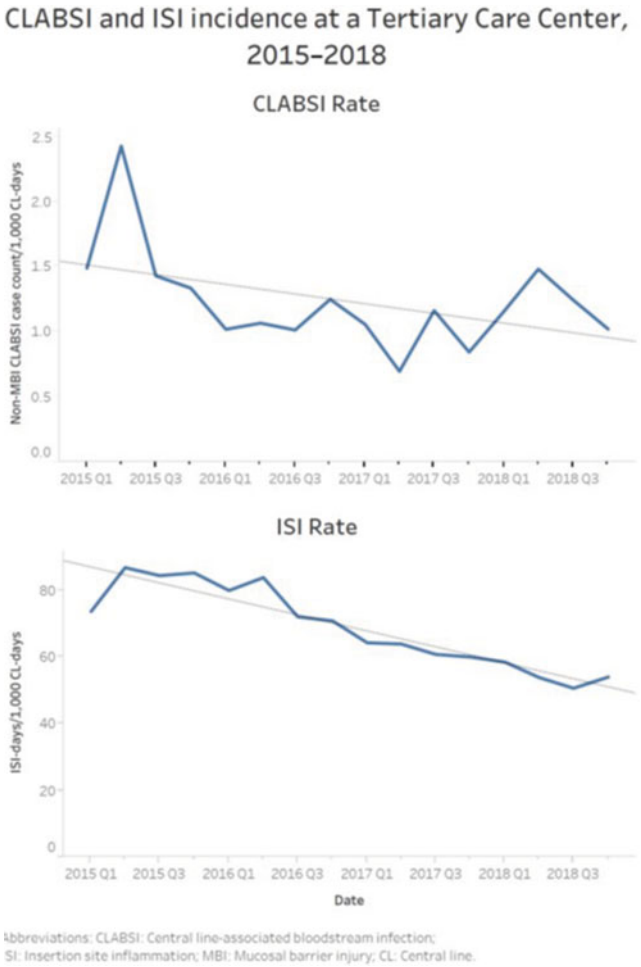

Fig. 1.

CL insertion-site characteristics in specifically designed flow sheets in the EMR. An ISI was counted every time ≥1 of the following signs were documented during CL assessments: edema, erythema, induration, tenderness, or drainage. A 1:2 case-control investigation was performed by matching nonmucosal barrier injury (non-MBI) CLABSI patients (cases) to patients without a CLABSI diagnosis (controls). We matched for age (±10 years), sex, date (±30 days), inpatient unit, central-line days, and central-line type (temporary vs permanent). The main exposure of interest was having an ISI on or before CLABSI onset. CLABSIs were determined using CDC NHSN definitions. We then created a metric: ISI days (defined as the number of days with ≥1 ISI documented) and plotted ISI incidence (ISI days per central-line days) to quantify the burden of ISIs and to determine whether ISI and non-MBI CLABSI incidences were collinear. An automated surveillance system for ISI was created using structured query language queries to the EMR data repository and Tableau software. **Results:** During 2015–2018, we detected 194 CLABSI cases that were matched to 338 controls. CLABSI patients had greater odds of having an ISI (OR, 2.3; 95% CI, 1.3–4.0). Over the study period, ISI incidence decreased from ~80 to ~50 ISI days per 1,000 CL days. Non-MBI CLABSI rates also decreased from ~1.5 to ~1.0 CLABSIs per 1,000 CL days. **Conclusions:** ISI incidence is associated with non-MBI CLABSI incidence. Because ISI incidence is higher than CLABSI incidence, surveillance for ISI could be a more sensitive indicator for monitoring the impact of CLABSI prevention practices. Automated surveillance for novel process metrics is a promising infection prevention tool.

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Interrater Reliability: Item Analysis to Develop Valid Questions for Case-Study Scenarios

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Background: Development of an interrater reliability (IRR) process for healthcare-associated infection surveillance is a valuable learning tool for infection preventionists (IPs) and increases accuracy and consistency in applying National Healthcare Safety Network (NHSN) definitions (1-3). Case studies from numerous resources were distributed to infection preventionists of varying experience levels (4-6). Item analysis, including item difficulty index and item discrimination index, was applied to individual test questions to determine the validity of the case scenarios at measuring individual mastery of the NHSN surveillance definitions (7-8). **Methods:** Beginning in 2016, a mandatory internal IRR program was developed and distributed to infection preventionists (IPs) of varying experience level. Each year through 2019, a test containing 30–34 case studies was developed with multiple-choice questions. Case studies were analyzed using 2 statistical methods to determine item difficulty and validity of written scenarios. *P* values for each test question were calculated using the item difficulty index formula, with harder questions resulting in values closer to 0.0. Point biserial correlation was applied to each question to determine highly discriminating questions, measured in a range from −1.0 and 1.0. **Results:** Between 2016 and 2019, 124 questions were developed and 145 respondents participated in the mandatory IRR program. The overall test difficulty was 0.70 (range, 0.64–0.74). Moreover, 17 questions (14%) were determined to have high "excellent" discrimination, 41 questions (33%) were determined to have "good" discrimination, 57 questions (46%) were determined to have "poor" discrimination, and 9 questions (7%) were found to have negative discrimination values. **Conclusions:** IRR testing identifies educational opportunities for IPs responsible for the correct application of NHSN surveillance definitions. Valid test scenarios are foundational components of IRR tests. Case scenarios that are determined to have a high discrimination index should be used to develop future test questions to better assess mastery of application of surveillance definitions to clinical cases.

				Item discrimination			
IRR	No. of participants	Total Questions	Overall Test Difficulty (closer to 0 = more difficult)	Questions calculated to have negative discrimination	No. of questions in 0%-24% range (neutral)	No. of questions in 25%-39% range (Good)	No. of questions in 40%-100% range (Excellent)
2016	41	30	0.74	1	16	9	4
2017	36	30	0.64	3	14	8	5
2018	36	30	0.71	1	13	12	4
2019	32	34	0.71	4	14	12	4
Totals	145	124	0.70	9	57	41	17

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